

of optical signals traveling in a first direction and a second set of subgroups of optical signals
traveling in a second direction;

STP
concl.
a first plurality of fine wavelength division multiplexers configured to support uni-
directional traffic comprising the first set of subgroups of opticals; and

a second plurality of fine wavelength division demultiplexers configured to support
uni-directional traffic comprising the second set of subgroups of optical signals. --

REMARKS

Applicants request that the above amendments be entered, and that the application be reconsidered in view of these amendments and the following remarks. Claims 2-7, 9-13, 15-26 and 28-40 are pending in this application. Claims 7, 9-11, 16 and 20 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over OTSUKA et al. (U.S. Patent No. 5,841,557) in view of CHRAPLYVY et al. (U.S. Patent No. 5,907,420). Claims 2-6, 15 and 17-19 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over OTSUKA et al. in view of CHRAPLYVY et al. and further in view of MELI et al. (U.S. Patent No. 5,946,117). Claims 12 and 21-25 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over OTSUKA et al. in view of CHRAPLYVY et al. and further in view of BAKER (U.S. Patent No. 5,452,124). Claims 13, 26 and 28 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over OTSUKA et al. in view of CHRAPLYVY et al. and further in view of ONAKA et al. (U.S. Patent No. 5,886,804). Claims 29-40 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over CLARK (U.S. Patent No. 6,041,152) in view of ZIRNGIBL (U.S. Patent No. 5,550,666).

or SUZUKI et al. (U.S. Patent No. 5,786,918). By way of the present amendment, Applicants propose canceling claims 2-7, 9-13, 15-26 and 28-40. Therefore, after entry of the present amendment, the rejection of these claims will be moot. Withdrawal of the rejections of claims 2-7, 9-13, 15-26 and 28-40 under 35 U.S.C. § 103(a) is, thus, respectfully requested.

Applicants further respectfully submit that OTSUKA *et al.* does not suggest or disclose the combination of features recited in the newly proposed claims. OTSUKA *et al.* discloses a system and method for scrambling the polarization of optical signals that have been combined, using wavelength division multiplexing, into combined optical signals. In a representative embodiment shown in FIG. 15, and described in column 19, line 30 through column 20, line 2, optical signals are transmitted via "signal light transmission sections" (e.g., 12N-1, 12W-(2i-1)) that are associated with optical channels (e.g., ch. 1(W), ch. 2i-1(W), etc.). Optical signals transmitted via the signal light transmission sections are combined in first "wave combiners" (e.g., 13-1, 13-2, 13-3, 13-4). The signals from the first wave combiners are further combined in second "wave combiners" (e.g., 13-5, 13-6) and in a third "wave combiner" 13-7. The combined optical signal output from "wave combiner" 13-7 is input into a polarization scrambler 14W-1 before amplification by an amplifier 18W. Alternatively, in the event of the failure of amplifier 18W, the combined optical signal output from "wave combiner" 1-7 can be amplified by backup amplifier 18P (see column 19, lines 41-54).

OTSUKA et al., therefore, teaches the *multiplexing* of subgroups of optical signals carried over multiple channels into a combined optical signal that is amplified by a single amplifier (either 18W or 18P). OTSUKA et al. contains no suggestion or teaching of the *demultiplexing* of optical signals as recited in independent claims 41, 49, 57, 65, 73, 75 and

77. For example, OTSUKA et al. does not suggest or disclose “demultiplexing the optical signals from individual channels of the set of multiplex channels into a first set of subgroups of optical signals” or “demultiplexing the first set of subgroups of optical signals into a group of optical signals within the operating window” as recited in the independent claims. The Office Action further cites CHRAPLYVY et al. as allegedly disclosing a plurality of amplifiers that amplify subgroups of optical signals. Applicants respectfully submit, however, that CHRAPLYVY et al. does not supply the demultiplexing of optical signals not taught by OTSUKA et al. OTSUKA et al. and CHRAPLYVY et al., therefore, either singly or in combination, do not suggest the features recited in claims 41, 49, 57, 65, 73, 75 and 77.

Applicants also respectfully submit that the newly proposed claims patentably distinguish over MELI et al. The Office Action has cited MELI et al. as allegedly disclosing a plurality of optical sources that generate optical signals having wavelengths between 1530 and 1560 nm. Applicants submit, however, that MELI et al. does not suggest or disclose the demultiplexing recited in claims 41, 49, 57, 65, 73, 75 and 77. MELI et al., thus, does not remedy the deficiencies of OTSUKA et al. or CHRAPLYVY et al. discussed above.

Applicants additionally submit that the newly proposed claims patentably distinguish over BAKER. The Office Action has cited BAKER as allegedly disclosing a bi-directional transmission system using wavelength division multiplexing in which multiplexers are located at first and second sites. Applicants submit, however, that BAKER does not suggest or disclose the demultiplexing recited in claims 41, 49, 57, 65, 73, 75 and 77. BAKER, therefore, does not supply the deficiencies of OTSUKA et al. or CHRAPLYVY et al. discussed above.

Applicants further submit that the newly proposed claims patentably distinguish over ONAKA et al. The Office Action has cited ONAKA et al. as allegedly disclosing an optical multiplex transmission system that includes dispersions compensating fibers. ONAKA et al., however, does not suggest or disclose the demultiplexing recited in claims 41, 49, 57, 65, 73, 75 and 77 and, thus, does not supply the deficiencies of OTSUKA et al. or CHRAPLYVY et al. discussed above.

Applicants intend to submit a Declaration under 37 C.F.R. § 1.131 to remove CLARK as alleged prior art. This Declaration should follow the present amendment. In view of this Declaration, Applicants respectfully request the elimination of CLARK as a grounds of rejection against the proposed new claims. Applicants additionally submit that the newly proposed claims patentably distinguish over ZIRNGIBL and SUZUKI et al. The Office Action cites both ZIRNGIBL and SUZUKI et al. as allegedly disclosing optical amplifiers associated with different wavelength division multiplexing units. Applicants respectfully submit, however, that neither ZIRNGIBL nor SUZUKI et al. suggest or disclose the demultiplexing recited in claims 41, 49, 57, 65, 73, 75 and 77.

Claims 42-48, 50-56, 58-64, 66-72, 74 and 76 depend, respectively, from claims 41, 49, 57, 65, 73, 75 and 77. These claims, therefore, patentably distinguish over the references cited in the final Office Action for at least the reasons set forth above with respect to claims 41, 49, 57, 65, 73, 75 and 77.

In view of the foregoing remarks, Applicants respectfully request that this amendment be entered. Applicants further request the Examiner's reconsideration and withdrawal of the outstanding rejections, and the timely allowance of this application. Applicants submit that the

proposed amendments do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner. Furthermore, Applicants submit that the entry of this amendment would place the application in better form for appeal in the event that the application is not allowed.

To the extent necessary, a petition for an extension of time under 37 CFR 1.136 is hereby made. Please change any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,



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